

## REMARKS

The above amendment and these remarks are responsive to the non-final Office Action of 4 Oct 2005, which includes a requirement for information under 37 CFR 1.105.

Claims 1-32 are in the case, none as yet allowed.

### 35 U.S.C. 101

Claims 1-32 have been rejected under 35 U.S.C. 101 as directed to non-statutory subject matter.

The Examiner finds the claims deficient as not being concrete for not fully describing the "complexity factor", resulting in the staffing requirements that are determined not being useful and not being tangible.

With respect to "complexity factor", applicants traverse. Applicants invention relates to processing of truck loads of electronic equipment of various complexities

as that relates to demanufacturing. Those of ordinary skill in the art will readily understand that a lap top is less complex than a desk top, which is less complex than an IBM AS 400, which is less complex than an ABM System/360. They will recognize that it is within the skill of the art to determine that one type of equipment is more complex than another, and to rank them on, say, a scale of one to ten. Careful precision is not required, but even at this gross level the complexity factor (defined as the work content multiplier [Specification, page 8, line 2]) is important and useful in the determination of staffing requirements.

Complexity level is related to the time it takes for an experience operator to tear down a particular piece of equipment to a point where the resulting components are reasonable to send out for recycling by a particular vendor, whose capabilities for recycling vary (by process and equipment resources). As will be apparent to those of skill in the art, a particular recycling vendor may have the capability to handle materials at a gross level, giving rise to a lesser complexity factor in the demanufacturing process, while another vendor may not have that capability and will only accept materials which have been broken down to a more discrete level, giving rise to a greater complexity factor in the demanufacturing process.

This explanation of "complexity" is taught by applicants, as follows:

"Anticipated equipment volumes can include such information as the type and number of units of equipment to be dismantled. When equipment of a certain type is received, experienced dismantlers disassemble at least one of that type to determine an equipment complexity factor in a process known as disassembly prototyping. Easily disassembled equipment types will have a relatively lower complexity factor, and equipment types that are difficult to disassemble will have a higher complexity factor. Salvageable and disposable content for a given equipment type will also be determined during disassembly prototyping. Higher salvageable content will indicate a higher complexity factor as care must be taken not to damage salvageable components during disassembly. Additional time must also be taken to properly store salvageable components rather than simply disposing of them. All of this information is then entered into a workload planning model, which calculates a workload forecast. Staffing requirements, with regard to both hiring and resource balancing between projects, can then be based on this

forecast." [Specification, page 5, line 11 ff.]

Further, as those of skill in the art will recognize, complexity is related to actual person hours and truck load weight by the following described, and precisely stated relationships (actual person hours for a give customer/weight being defined after initial profiling by experience).

"An exemplary embodiment of the invention converts truck loads to pounds, and applies a complexity factor to generate person hours. Conversion of volume measure (pounds, truckload, machine, or pallet, etc.) to persons hours is accomplished by generating a profile for the customer based initially on prototype dismantling and thereafter as modified by experience, or actual history of hours/volume measure."

[Specification, page 11, lines 11-18.]

The Examiner finds the claim 5 step of determining salvageable and disposable content as subjective. Applicants traverse. As previously noted, what is salvageable and disposable depends upon the capabilities of the recycling vendor, and as will be apparent to those of

skill in the art, for a given vendor those capabilities are known. The copending application, S/N 09/524,366 describes how salvageable and disposable content is determined. See for example, the discussion for determining optimum level of demanufacturing at page 4, lines 14ff and page 10, lines 6-22. In the present application, this concept is described as follows:

“In step 22, the returns from new customers, or new equipment or materials from existing customers, are evaluated to establish a dismantle complexity factor. In a preferred embodiment of the invention, this is accomplished by systematically dismantling machines as prototypes, identifying the work content and resulting items (saleable items, commodities, trash, etc.) This data may then be input to the machine tear down model described in E. J. Grenchus, Jr. et al. S/N 09/524,366 (supra).” [Specification, page 8, lines 12-20.]

Thus, applicants assert, the invention produces a useful, concrete, and tangible result by determining staffing requirements based upon dismantling prototype machines, identifying work content and resulting items, to determine a complexity factor and productivity targets which

are, with applicants teachings, of adequate precision and within the skill of those of ordinary skill in the art.

The Examiner finds claim 32 to be merely a program per se. Applicants have amended claim 32 to recite a computer readable medium on which program instructions are recorded.

**35 U.S.C. 112**

Claims 1-32 have been rejected under 35 U.S.C. 112, first paragraph, as non enabling.

In the context of this rejection, the Examiner again refers to the determination of the complexity factor and the determination of salvageable and disposable content. Applicants discussion above with respect to these determinations in the context of the rejection under 35 U.S.C. 101 also applies here.

Claims 1-32 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite.

In the context of this rejection, the Examiner

again refers to the determination of the complexity factor and the determination of salvageable and disposable content. Applicants discussion above with respect to these determinations in the context of the rejection under 35 U.S.C. 101 also applies here.

Claims 16-18 have been rejected under 35 U.S.C. 112, second paragraph, as being incomplete.

Applicants have amended these claims to clarify that the "model" is a computer implemented model. Applicants have described such a model by example as follows:

"This model may be implemented as, for example, a Lotus 1-2-3 spreadsheet, which facilitates periodic revision." [Specification, page 7, line 18ff.]

A Lotus 1-2-3 spreadsheet is an example of computer implemented model.

Applicants request that the rejection of claims 1-32 and of 16-18 under 35 U.S.C. 112, second paragraph, be reconsidered and withdrawn.

**37 CFR 1.105**

The Examiner has determined that the information listed below is reasonably necessary to the examination of this application [Office Action, Attachment pages 2-4].

Robert A. Keene, one of the coinventors of this application, is deceased (about December 2004), and the response to the requirement is submitted, obviously, without his participation.

The information required is as follows:

1. "...any information about determining staffing requirements for a manufacturing enterprise that was known and/or used at the time of submission of the present patent application."

See response to items 2-6, below.

2. "...the citation and a copy of each publication that any of the applicants authored or co-authored and which

describe the disclosed subject matter of determining staffing requirements for a demanufacturing enterprise."

The following are papers that the inventors and other IBM peers have published on similar subjects. However, none of these describe using productivity targets in determining staffing requirements.

U. Ed Grenchus, Robert Keene, Charles Nobs, and Larry Yehle, "The Quest for Environmental and Productivity Improvements at the IBM Demanufacturing and Asset Recovery Center". IEEE (C) 2001. 25-29. From PTO-1449 filed with S/N 09/524,366.

This article by at least one of the inventors describes some of the daily operational process changes that the IBM Asset Recovery Center in Endicott, NY made to improve both productivity and environmental performance. However, there is here no teaching of determining productivity targets as a step in determining staffing requirements. There is

reference to productivity, but not the development of productivity targets and ~~there~~ <sup>their</sup> ~~43~~ use in projecting staffing requirements. At this stage of development of the process, productivity improvement was considered an operational, daily, line-support activity including evaluation of workstation layout, availability of tools, team membership (skill level), supervision, and so forth.

W. Ed Grenchus, R. Keene, and C. Nobs,  
AT. "Demanufacturing of Information Technology Equipment", Proceedings from the 1997 IEEE International Symposium on Electronics and the Environment, pp 157-160, May 1997, San Francisco, Calif.

This article by at least one of the inventors describes the generic process utilized at IBM's Asset Recovery Center in Endicott, NY to receive, dismantle, sort and disposition commodity material for recovery. It does not describe determining staffing requirements nor determining productivity targets as a

step in determining staffing requirements.

X. E. Grenchus, "Overview of IBM's Demanufacturing  
AU. Process", The Demanufacturing of Electronic  
Equipment Conference, October 1997, Deerfield  
Beach, Florida.

This article by at least one of the inventors  
also describes the generic process utilized  
at IBM's Asset Recovery Center in Endicott,  
NY to receive, dismantle, sort and  
disposition commodity material for recovery.

It does not describe determining staffing  
requirements nor determining productivity  
targets as a step in determining staffing  
requirements.

AR. Ed Grenchus, Robert Keene, and Charles Nobs,  
"Composition and Value of Returned Consumer and  
Industrial Information Technology Equipment".

This article by at least one of the inventors  
describes value of various classes of  
returned IT equipment. It does not describe

determining staffing requirements nor  
determining productivity targets as a step in  
determining staffing requirements.

AS. E. Grenchus, R. Keene, and C. Nobs, "Process of  
Demanufacturing Computer Equipment as Practiced at  
IBM's Asset Recovery Center", Industrial  
Engineering SOLUTIONS '98 Conference Proceedings,  
pp 62-67, May 1998, Banff, Alberta, Canada.

This article by at least one of the inventors  
also describes the generic process utilized  
at IBM's Asset Recovery Center in Endicott,  
NY to receive, dismantle, sort and  
disposition commodity material for recovery.  
It does not describe determining staffing  
requirements nor determining productivity  
targets as a step in determining staffing  
requirements.

AV. E. Grenchus, R. Keene, R. Luce, L. Yehle. "A  
Pragmatic Approach to Demanufacturing Information  
Technology Equipment." 1998.

This paper provides a high level set of "Do's and Don'ts" when processing returned IT equipment. There is no discussion of productivity targets.

AW. E. Grenchus, S. Johnson, D. McDonnell. "Improving Environmental Performance through Reverse Logistics". 2001.

This paper describes how IBM's Global Asset Recovery Services organization has integrated itself into IBM's reverse logistics process. It discusses the unit's mission, its product disposition hierarchy, its accomplishments. It does mention the word "productivity" but only in the sense that utilizing data gained from its experience has allowed the organization to make significant operational improvements over time.

Copies of the above references U, W and X are included as attachments to the Office Action, and references AR-AW are attached hereto. (References AT and AU are included to

provide more complete bibliographic citations than are given in the Form PTO-892 accompanying the Office Action.)

3. "...the citation and copy of each publication that is a source used for the description of the prior art in the disclosure. For each publication... a concise explanation of that publication's contribution to the description of the prior art."

Publications which provide support for material included in the Background section of the specification include the following, copies of which are attached.

a. L. Bertagnoli, "Computers Get a Second Chance", Crain's Chicago Business, v23, 10/02/2000.

b. L.A. Greene, "Recycling - No More Electronics Dumping in Massachusetts", Environmental Health Perspectives, v108, n9, 09/2000.

c. D. Pescovitz, "Please Dispose of Properly", Scientific American: Technology and Business, February 2000.

d. H. Schussler, "All Used Up With Someplace to Go",  
The New York Times, 11/23/2000.

e. R. Hepp, "The Electronic Junk Pile", Chicago  
Tribune Internet Edition, 02/28/2000.

f. W. E. LeRoy, "Scrap From Electronics Seen  
'Skyrocketing'", American Metal Market, Metals  
Recycling Supplement, 10/14/1998.

g. N. Alster and W. Echikson, "Are Old PC's Poisoning  
Us?", Business Week, 06/12/2000.

These publications describe several points of interest,  
as follows.

It is common knowledge (Moore's Law) that there have  
been constant and significant advances in IT technology  
(processor speed, function/capability, memory capacity, and  
so forth) and that these have resulted in rapid turn over in  
assets as consumers and businesses always seek to have  
leading edge technology and capability. Further, as the  
cost of typical computers decline, more and more consumers  
have purchased computers to the point where, in most

industrialized nations, personal computers are ubiquitous.

The result is that there is an ever growing quantity of computers that are becoming technologically obsolete and in need of disposal. In some cases, product end of life management and disposal schemes include determining full asset reuse options, dismantling for parts or commodity material recycling, incineration, land-filling, and donating to charity or academic institutions.

It is also brought out in these references that many models of electrical and electronic equipment can contain various hazardous materials (lead, mercury, cadmium, hexavalent chromium, certain types of batteries and flame retardant materials. If not disposed of properly, there can be significant future health or environmental impact. Unfortunately, as these references point out, the electronics industry and many countries have not developed the infrastructure to support environmentally friendly disposal of obsolete assets.

As awareness of environment concerns has increased, consumers and governments have come to require certain disposal requirements, including product take-back

(collection and disposal), and the banning disposal in landfills. The net is that companies must continue to develop and deploy cost efficient product disposal processes that are environmentally friendly and that comply with regulatory requirements and consumer expectations.

4. "...the citation and a copy of each publication that any of the applicants relied upon to develop the disclosed subject matter that describes the applicant's invention, particularly as to developing staffing requirements for a demanufacturing enterprise. For each publication... a concise explanation of the reliance placed on that publication in the development of the disclosed subject matter."

Applicants are not aware of any research done by any of the inventors in publications dealing with staffing requirements. Inventor Robert Keene (deceased) did some of the background work, but on information and belief, neither he nor any of the other inventors researched publications on "staffing requirements for a demanufacturing enterprise".

5. "...the citation and copy of each publication that any of the applicants relied upon to draft the claimed subject matter. For each publication...a concise explanation of the reliance placed on that publication in distinguishing the claimed subject matter from the prior art."

Applicants used no publications, other than those previously listed and copending application S/N 09/524,366, in drafting (meaning, applicants surmise, developing) the claimed subject matter. That copending application, which is incorporated by reference into the subject application, describes a model for determining staffing requirements of a de-manufacturing enterprise as it existed prior to adding to the model the concept of productivity targets. These targets take into account productivity improvements associated with learning curve improvements and improvements in disassembly tools and equipment.

6. "...state the specific improvements of the claimed subject matter in claims 1-32 over the disclosed prior art and indicate the specific elements in the claimed

subject matter that provide those improvements. For those claims expressed as means or steps plus function...the specific page and line numbers within the disclosure that describe the claimed structure and actions."

The specific improvement over the disclosed prior art, including the copending application (which is not prior art, *per se*) is determining productivity targets as an element in determining staffing requirements. This concept of productivity targets is described in the specification at Figure 3, element 36; page 6, line 18 to page 7, line 17; and page 11, lines 2-10.

#### **SUMMARY AND CONCLUSION**

Applicants urge that the above amendments be entered and the case passed to issue with claims 1-32.

The Application is believed to be in condition for allowance and such action by the Examiner is urged. Should

differences remain, however, which do not place one/more of the remaining claims in condition for allowance, the Examiner is requested to phone the undersigned at the number provided below for the purpose of providing constructive assistance and suggestions in accordance with M.P.E.P. Sections 707.02(j) and 707.03 in order that allowable claims can be presented, thereby placing the Application in condition for allowance without further proceedings being necessary.

Sincerely,

Edward J.Grenchus, Jr. et al.

By

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